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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,140	03/29/2004	Leopold Werner Kepplinger	P/2154-99	5415

2352 7590 06/07/2005

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NEW YORK, NY 100368403

EXAMINER
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ANDREWS, MELVYN J

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 06/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/813,140

Applicant(s)

KEPPLINGER ET AL.

Examiner

Melvyn J. Andrews

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 to 39 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method which is carried out to avoid or minimize the formation of magnetite, does not reasonably provide enablement for direct reduction of iron ore without avoiding or minimizing the formation of magnetite. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The specification is not enabling to directly reduce iron ore without avoiding or minimizing the formation of magnetite.

The expression "with respect to the avoidance of magnetite formation" fails to define the conditions or steps required to effectively avoid the formation of magnetite.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 to 39 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

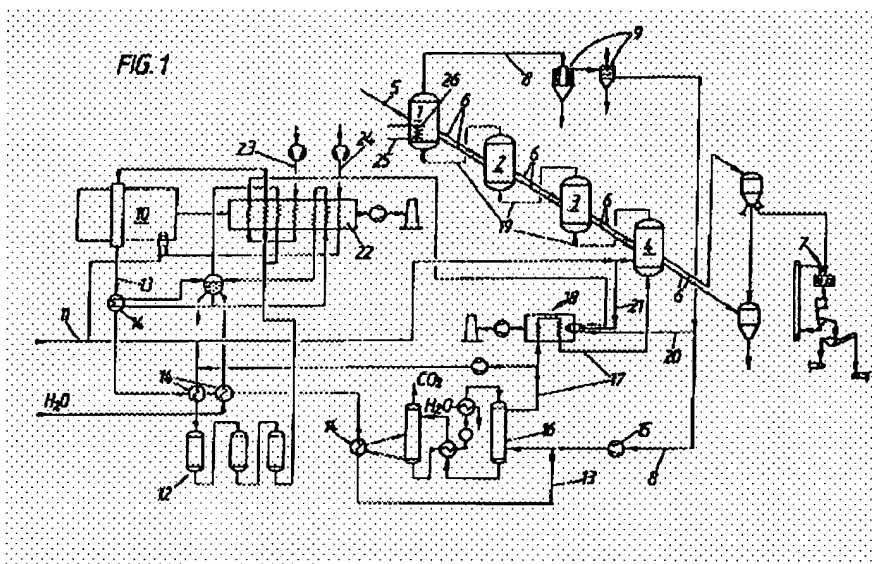
Claim 4 recites the limitation "oxygen and "magnetite" in lines 18 and 19.

There is insufficient antecedent basis for these limitations in the claim.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 to 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeller et al (US 6,336,954). Zeller et al discloses a process for the direct reduction of iron ore in a plurality of reaction zones as shown in FIG.1



In the first fluidized bed zone the temperature is adjusted whereby formation of magnetite is avoided or reduced to an acceptable level because iron-oxide containing material is subjected to a temperature of between 400°C and 580° C (col.9 line 44 to col.10, line 16) and wherein oxygen or an oxygen-containing gas is introduced into the first fluidized bed zone but does not disclose "particulate pathways" conditioned by at least one step of increasing the degree of oxidation of the reducing gas and

decreasing the temperature but Zeller et al does disclose four fluidized bed reactors 1 to 4 consecutively arranged in series (col.5, lines 51 to 64) which are obviously the functional equivalent to the claimed "particulate pathways".

With respect to claims 4, 5, 6, 8,10,12,14,16,18, 21, 22, 24, 26, 28, 30, 32, 34 and 36 Zeller et al does not explicitly disclose in the first pathway reaction zone removing oxygen at a maximum maintained reduction speed of 0.2% oxygen removal per minute but it would have been obvious to one of ordinary skill in the art at the time the invention was made optimize the reduction rate which is a result effective variable In re Boesch 205 USPQ 215.

### ***Response to Arguments***

Applicant's arguments filed March 23, 2005 have been fully considered but they are not persuasive. Applicants argue that it would advantageous to already preheat the material to a higher temperature that is below 400 degrees C. but Zeller claims the temperature in the first fluidized bed zone is adjusted to be above 580 degrees C. (col.10, lines 1-3). Applicants arguments with respect to reaction speed have been considered but are not persuasive that Zeller fails to recognize this variable because Zeller discloses that magnetite formed on the surface of a particle of an iron-oxide containing material results in reaction speed being reduced (col.2, lines 40 to 55) so that avoidance of magnetite formation would result obviously in increased reaction or reduction speed .

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvyn J. Andrews whose telephone number is (571)272-1239. The examiner can normally be reached on 8:00A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJA  
June 3, 2005

*Melvyn Andrews*  
**MELVYN ANDREWS**  
**PRIMARY EXAMINER**